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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/395,184 | 09/14/1999 | SHUICHI UENO | 0057-2511-2Y | 5567 |

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| EXAMINER |
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LOKE, STEVEN HO YIN

| ART UNIT | PAPER NUMBER |
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2811

DATE MAILED: 03/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/395,184

Applicant(s)

UENO ET AL.

Examiner

Steven Loke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-12,15,16,19,20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6-12 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5,15,20,22 and 24 is/are allowed.
- 6) ☒ Claim(s) 16 and 23 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. The drawing is objected to under 37 CFR 1.83(a). The drawing must show every feature of the invention specified in the claims. Therefore, the second well on one side of the predetermined boundary has a higher concentration than the first wells on said one side must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawing is objected to because fig. 3 does not show the impurity concentration of the second well W2 is higher than that of the first wells W1 (page 10, line 23 to page 11, line 6). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 16 and 23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Manning.

In regards to claim 16, Manning shows all the elements of the claimed invention in fig. 6C. It is a semiconductor device, comprises: a semiconductor substrate [67]; a plurality of element isolation films [70] formed such as to have a predetermined uniform

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depth from a main surface of said semiconductor substrate, said element isolation films [70] dividing the area from said main surface to said depth into a plurality of first regions; first wells [95, 116] formed in said first regions, respectively; and a second well [66] formed in a second region deeper than each of said first wells [95, 116] in said semiconductor substrate, said second well [66] being in contact with some of said first wells [95], wherein said first and second wells [95, 66] of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type (n-type), and said first wells [116] on the other side are of a second conductivity type (p-type), and wherein said second well [66] is formed only on one side of said second region with reference to the predetermined boundary.

In regards to claim 23, Manning further discloses a single element (N-well tie [95]) is formed in a single first region.

5. Claims 1, 5, 15, 20, 22 and 24 are allowed.

6. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The first major difference in the claims not found in the prior art of record is a semiconductor device comprising: an element isolation film dividing the area from a main surface to a depth into a plurality of first regions; first wells formed in the first regions; and a second well is formed only on one side of a second region with reference to a predetermined boundary. The second major difference in the claims not found in

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the prior art of record is a second well on one side of a predetermined boundary has a higher concentration than the first wells on the one side. The third major difference in the claims not found in the prior art of record is the second well is formed in a memory cell part in the second region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (703) 308-4920. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sl
March 2, 2003

Steven Loke
Primary Examiner

